SGLT-2 Inhibitors, Insulin and Diabetic Ketoacidosis (DKA)

When taking insulin and an SGLT-2 inhibitor (_____), you need to be extra careful when you aren't feeling well. When you're sick, vomiting, have diarrhea, or cannot drink enough fluids, you should **stop taking SGLT-2 inhibitors** until your symptoms go away. In rare cases, these medicines can cause diabetic ketoacidosis (DKA). DKA is acid buildup in the blood.

SGLT-2 inhibitors cause you to pee out the extra sugar that you have in your blood from being sick. This causes your body to look for other sources of energy, such as fat. Ketones are a by-product of the body breaking down fat for energy. These ketones can make your blood acidic, which can be life-threatening. Taking extra insulin will get rid of the ketones and help you get better.

<u>WITHOUT</u> SGLT-2 inhibitors:

If you have diabetes, normally your blood sugar goes up when you're sick. When your blood sugar is higher than normal and you're sick, you would take more insulin to get your blood sugar down into target ranges. This would fix both your blood sugar and take care of the ketones.

<u>WITH</u> SGLT-2 inhibitors:

If you're taking an SGLT-2 inhibitor and you get sick, you may find that your blood sugars **do not** run higher than normal. But you may still be getting quite sick and could develop DKA.

Signs and symptoms of too many ketones (DKA)

- Nausea/vomiting
- Trouble breathing
- Feeling very tired or sleepy
- Dehydration (the body doesn't have the water it needs)
- Other symptoms of your illness

If you have questions, call your healthcare provider at _____ during business hours. For 24/7 nurse advice and general health information, call Health Link at 811.

You're taking an SGLT-2 inhibitor and insulin and you feel unwell. Check for ketones (even if your blood sugar is not too high) using Ketostix® or a blood ketone tester, and follow the chart below.

If your urine ketones are trace or small OR your blood ketones are 0.0–0.2mmol/L, follow the handout "Sick Day Management Guidelines for People on Insulin." If your urine ketones are moderate or large, or your blood ketones are more than 0.3mmol/L, follow the chart below.

Your weight is 149.9 pounds (68.0kg) or less			Your weight is 150 pounds (68.1kg) or more		
Blood ketones (mmol/L)	Mealtime insulin (units)	Urine ketones	Blood ketones (mmol/L)	Mealtime insulin (units)	Urine ketones
0.3	4		0.3	5	
0.4	5	moderate	0.4	6	moderate
0.5	6		0.5	7	
0.6 or more	7	large	0.6 or more	8	large

Drink 1 cup of calorie-free liquid every hour to prevent dehydration **and, if your blood sugar is less than 10.0mmol/L,** eat or drink 15 grams of glucose every hour.

Glucose examples
- 3/4 cup of juice or regular pop
- 2 rolls of Rockets®
- 4–6 dextrose tablets

Keep a fast-acting carbohydrate handy in case of low blood glucose.

Keep checking your blood sugar and ketones every **2 hours**. Give the above correction insulin every 2 hours until your blood ketone level is 0.2 mmol/L or less, or your urine ketone level is small, trace, or negative. Then, follow the handout "Sick Day Management Guidelines for People on Insulin."

Stop taking the following medicines until your ketones are gone:
Metformin or Glumetza®
SGLT-2 inhibitors_____
GLP-1 agonists_____
Other diabetes pills_____

Ask your healthcare provider if you should stop taking non-steroidal anti-inflammatory medicines like ibuprofen, Motrin®, Advil®, naproxen, Aleve®, aspirin, diclofenac, or Voltaren® **while you have ketones.**

These medicines can cause your kidney function to get worse or cause side effects.

Go to the Emergency Department if you are:

- Vomiting and can't keep fluids down.
- Showing moderate/large urine ketones for more than 6 hours.
- Having higher than 1.5mmol/L in blood ketones for more than 6 hours.
- Feeling very unwell and can't manage at home.